

Notes on Calliphoridae of the Ethiopian Region, with descriptions of eight new species (Diptera)

by

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SYNOPSIS

The following eight new species are described: *Phumosia victoriae*, *cooksoni* (Rhodesia); *Isomyia transvaalensis* (Transvaal); *Rhyncomya paratristis* (Zululand); *Miltogramma basuto*, *audacis* (Basutoland); *Pterella stuckenbergi* (Basutoland); *Sarcophaga knysnaensis* (Cape Province). *Phumosia currani* n.n. is proposed for *P. incerta* Curran nec Malloch. New records are given for *Bengalia tibiaris* Villen. and *Pterella triseriata* Curran, and *Phumosia pseudolucilia* Villen. is redescribed. A new key is given to the *Miltogramma* species of Subsaharan Africa and Madagascar.

For many years Mr. B. R. Stuckenberg of the Natal Museum has entrusted the Department of Entomology of the South African Institute for Medical Research with the study of his well-prepared and conscientiously collected material of Calliphoridae obtained during many trips to various parts of Southern Africa. Since the publications of the Calliphoridae of the Ethiopian region by Zumpt (1956, 1958a, 1961a), quite a number of new species and other interesting data have come to light, which formed the contents of other publications by Zumpt (1958b, 1959a & b, 1960, 1961b, 1962a & b, 1964). A further publication is presented herewith, based on material in the Natal Museum and in the Entomological Department of the S.A.I.M.R.

We wish to thank Mr. Stuckenberg for providing the material and for presenting a number of type specimens to the S.A.I.M.R. Furthermore, our thanks are due to the Director of this Institute for his great understanding of the necessity of doing this kind of purely taxonomic work.

Phumosia pseudolucilia (Villeneuve)

Paratricylea pseudolucilia Villeneuve, Ann. Soc. ent. France **85**, 1916, p. 156; Malloch, Ann. Mag. nat. Hist. (9) **17**, 1926, p. 494; Rickenbach, Hamon & Ovazzo, Bull. Soc. ent. France **67**, 1962, p. 132.

In his revision of the *Phumosia* species of the Ethiopian region, Zumpt (1956) listed under *P. pseudolucilia* a number of specimens which, according to the structure of the hypopygia, actually represented two different units. The one showed a hypopygium with relatively stout cerci and regularly curved paralobi, the other type of hypopygium was characterised by more slender cerci and paralobi, the last having on the inner side a deep incision (fig. 1). Dr. P. Basilewsky, Musée Royale de l'Afrique Centrale, was kind enough to send us the male holotype and two female paratypes and also allowed us to check the

male genitalia. They showed that the second type of hypopygium (fig. 12 in Zumpt's publication) refers to the true *P. pseudolucilia* Villeneuve, whereas the other type concerns a species which will be described as new in a forthcoming paper.

Villeneuve's as well as Malloch's descriptions are short and not fully comparable with Zumpt's descriptions of the *Phumosia* species. A redescription of the typical material is therefore given.

Male: Eyes bare, with the upper facets slightly larger than the lower ones and not sharply demarcated from them. Frons strongly narrowed in the middle, at the tip of the ocellar triangle as broad as the anterior ocellus. Lower part of frontal stripe triangular, black. Parafrontalia black, with a silvery pollinosity and eight pairs of *paf*; *oc* and *iv* long and thick.

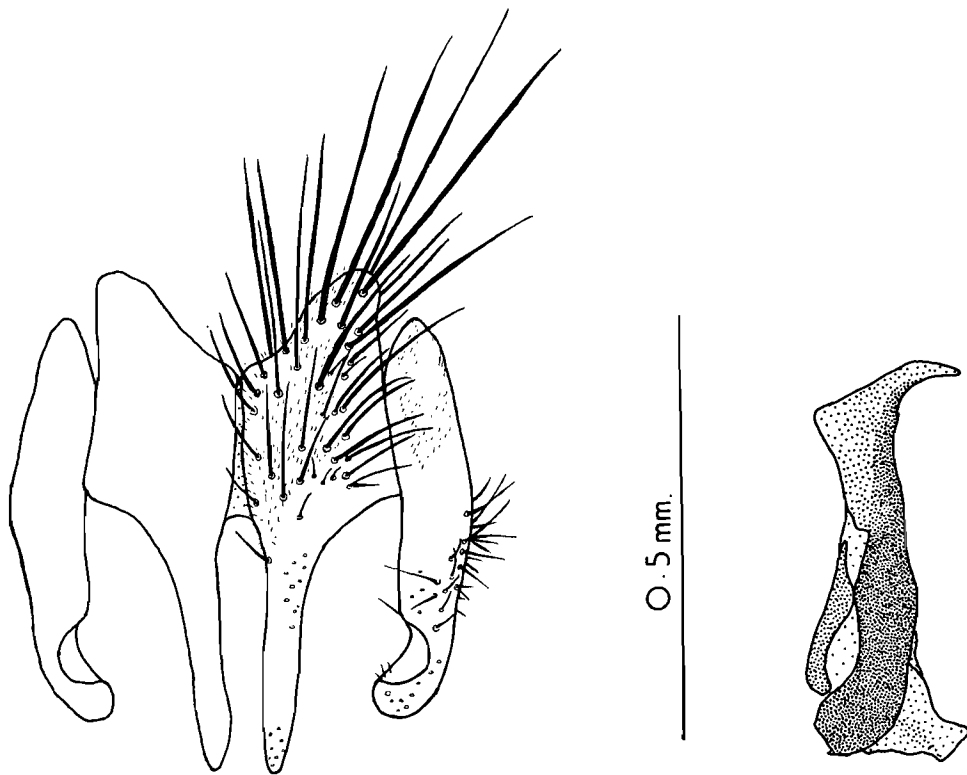


Fig. 1. *Phumosia pseudolucilia* (Villeneuve). Cerci and paralobi in frontal view, phallosome laterally. (Specimen from Zululand.)

Parafacialia predominantly black and silvery pollinose like the parafrontalia, reddish only in the lower part. Vibrissarium reddish, but bucca deep black, silvery pollinose and slightly glossy. Vertex coloured like the buccae. Vibrissa long and thick, peristomal bristles and buccal hairs black, facial ridge above the vibrissa with a number of black setae.

Antennal groove predominantly black, antennae for the greatest part black-brown, third segment about three times as long as the second, arista with long hairs on both sides. Palpi reddish, moderately enlarged terminally.

Thorax dark metallic blue, partly with a weak whitish pruinosity, pro- and poststigma black-brown. Chaetotaxy: $ac = 1 + 1$ (but prescutellair pair very weak), $dc = 2 + 4$, $ia = 1 + 3$, $prs = 1$, $ph = 2$, $h = 3$, $n = 2$, $sa = 3$, $pa = 2$, $sc = 4 + 1$, $st = 2 : 1$, pp and pst present. Propleuron and prosternum as well as the alar-declivity haired. Wings tinged slightly brownish, veins yellow-brown, costal spine long, r_{4+5} dorsally with a row of black setae reaching $r-m$, R_5 widely open, thoracic squama brown in the terminal half, halter yellow-brown. Legs with the femora predominantly black-brown, tibiae and tarsi yellow-brown; fore-tibia with several ad and one long sub-median pv ; mid-tibia with a submedian ad , pd , av and 2 pv ; hind-tibia with 2 long and a shorter ad , 2 av and 2 pd ; claws slightly shorter than the last tarsal segment.

Abdomen stout, about as long as broad, strongly metallic bluish-green, but margins of segments narrowly darker blue.

Female: Frons at vertex measuring $\frac{2}{5}$ of eye-length, frontal stripe slightly narrowed towards the lunula, dark- to reddish-brown. Chaetotaxy of head complete, with two long proclinate fo and a few setae on the parafrontalia; parafacialia bare.

Length: 9 mm.

This description is based on the male holotype and 2 paratypic females from Nieuw-dorp, former Belgian Congo, leg. Bequaert, 5.V.1915.

Further material which agrees in the male sex with the holotype, is before us from Rutshuru, former Belgian Congo, 1 ♂, 2 ♀♀ leg. Lippens, 12.-16.V.1936; Nagichot, Sudan, 1 ♂ leg. Lewis, 21.V.1946; Amani, Tanzania, 1 ♂, 2 ♀♀ leg. Paterson; Ndumu, Natal, 2 ♂♂ leg. Paterson, 28.V.1956; Gwaliweni, Natal, 2 ♂♂, 1 ♀ leg. Paterson, 23.I.1957. The body-length of these specimens varies between 6 and 10 mm.

***Phumosia victoriae* n.sp.**

This species runs down to *P. pseudolucilia* (Zumpt, 1956), from which it is easily separable by the bright orange antennae. The hypopygium (fig. 2) is characterised by stout cerci.

Male: Eyes bare with the facets of the upper three-quarters larger than those in the lower fourth, but completely graduating into them in size. In front of the black ocellar triangle the eyes are nearly touching, the parafrontalia being compressed to a blackish stripe which is much narrower than the anterior ocellus. In the lower half of the frons, the frontal stripe is developed as a long triangle of yellow-brown colour. There are 9 pairs of paf developed. Parafacialia orange and densely silvery pollinose, without setae. Antennal groove and vibrissarium yellow-brown, antennae bright orange, third segment three times as long as the second, arista with long hairs on both sides. Buccae and vertex blackish, slightly glossy, one fifth as high as the eye is long. Buccal and peristomal hairs and bristles black, palpi yellow.

Thorax bright metallic, bluish-green, partly with a weak whitish pruinosity, pro- and poststigma black-brown. Chaetotaxy: $ac = 1 + 1$ (a second prescutellar pair is weakly developed), $dc = 2 + 4$, $ia = 1 + 3$, $prs = 1$, $ph = 2$, $h = 3$, $n = 2$, $sa = 4$, $pa = 2$,

$sc = 5 + 1$ (anterior one weak), $st = 2 : 1$, pp and psl present. Propleuron and prosternum as well as the alar-declivity haired. Wings tinged yellowish, veins yellow-brown, costal spine long, r_{4+5} dorsally with a row of black setae reaching $r-m$, R_5 widely open, thoracic squama and halter yellow. Legs with black femora and yellow-brown tibiae and tarsi; fore-tibia with several ad and one long submedian pv ; mid-tibia with a submedian ad , pd , av and 2 pv ; hind-tibia with 2-3 ad , 2 av and 2 pd ; claws and pulvilli shorter than the last tarsal segment.

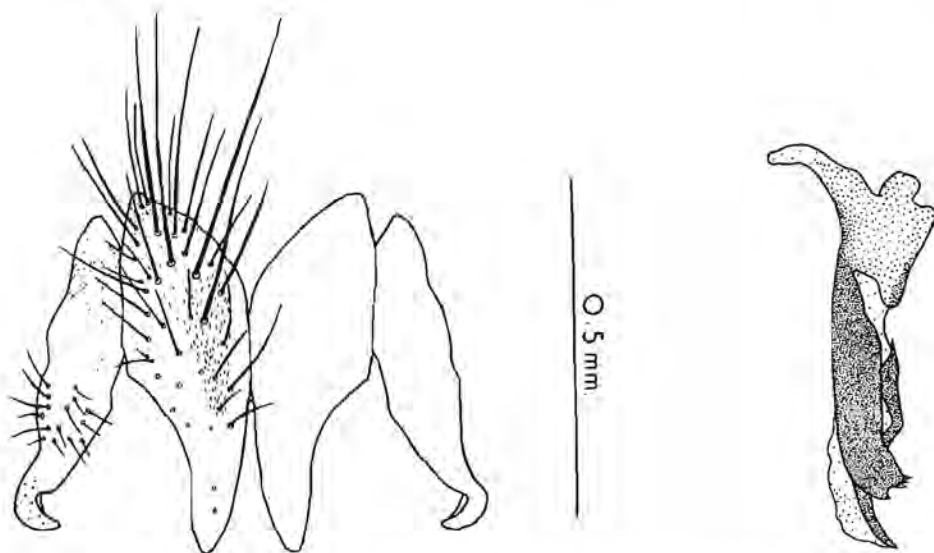


Fig. 2. *Phumosia victoriae* n.sp. Cerci and paralobi in frontal view, phallosome laterally. (Holotype from Victoria Falls, Zambia.)

Abdomen stout, about as long as broad, strongly metallic green, hind margins of tergites not distinctly blackened.

Female: Frons at vertex measuring $\frac{2}{3}$ of eye-length; frontal stripe subparallel, blackish in the upper part and orange near the antennal groove. Chaetotaxy of head complete, with two proclinate fo and a few black setae in the lower part of the parafrontalia, but parafacialia bare as in the male.

Length: 8-9 mm.

Locality: Victoria Falls, Zambia, VII.1957, 1 ♂ ♀ leg. H. Paterson. Holotype ♂ and paratype ♀ in the collection of the S.A.I.M.R., Johannesburg.

***Phumosia cooksoni* n.sp.**

In the key to the Ethiopian *Phumosia* species (Zumpt, 1956) this species runs down to *P. snyderi* Zpt., from which it is separable by the structure of the hypopygium, the general colouring, and the eyes of male, which are very close together for a fairly long distance. The hypopygium (fig. 3) is more similar to that of *P. bicolor* (Bezzi), but generally more

slender. The male frons is much narrower in the new species; an antennal carina is not developed, and the alar-declivity is bare.

Male: Eyes with the facets of the upper three-quarters distinctly larger than those in the lower fourth, but they are not strongly demarcated from one another. In front of the ocellar triangle, the eyes are nearly touching, the parafrontalia being compressed to a whitish line, which is always distinctly narrower than the anterior ocellus. In the lower half of the frons, the frontal stripe is developed as a long triangle of an orange colour. Parafrontalia silvery pollinose, with 7 to 8 pairs of parafrontals, *oc* and *iv* long. Face yellow to orange, with a silvery and whitish pollinosity. Antennae slightly and irregularly darkened towards the tips, the third segment about twice as long as the second, arista with long hairs on both sides. A carina is not developed, and the antennae are close together at their bases. Vibrissa, peristomal and buccal hairs and bristles black, height of bucca about $\frac{1}{3}$ of eye-length. Palpi yellow, slightly bent, terminally dilated.

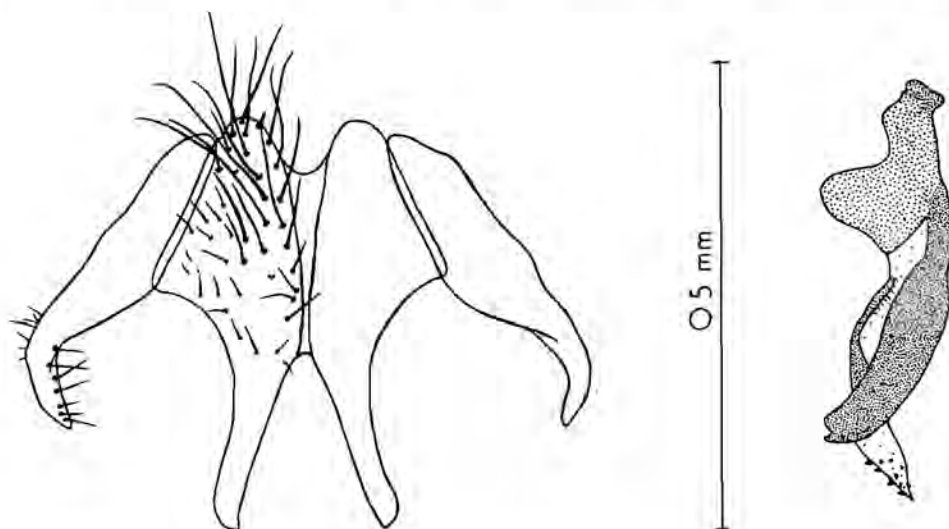


Fig. 3. *Phumosia cooksoni* n.sp. Cerci with paralobi and phallosome. (Holotype from Mt. Selinda, Rhodesia.)

Thorax with the mesonotum blackish and densely covered with a grey and brown pollinosity, scutellum yellow-brown in ground colour and also predominantly yellow pollinose, pleura yellow and greyish pollinose, but the dark colouring covers the greater part. This thoracic colour pattern shows a wide individual variability. Pro- and poststigma yellow. Chaetotaxy: *ac* = 1 + 3, *dc* = 2 + 3, *ia* = 1 + 2-3, *ph* = 1-2, *h* = 2, *prs* = 1, *n* = 2, *sa* = 3, *pa* = 2, *sc* = 3 + 1, *st* = 1 : 1, *pp* and *pst* present. Propleuron and prosternum haired, alar-declivity bare. Wings hyaline, veins yellow-brown, costal spine long, *r*₄₊₅ dorsally with a few setae which do not reach *r-m*, *R*₅ widely open, squama and halter yellow. Legs wholly yellow-brown, fore-tibia with several *ad* and one long submedian *pv*; mid-tibia with 2 *pv*

and one *pd*; *ad* and *av* are indistinct or hair-like; hind-tibia with 2-3 *ad*, 2 *pd* and 2 *av*; claws and pulvilli as long as the last tarsal segment.

Abdomen stout, about as long as broad, densely yellow or yellow-brown pollinose, without a distinct pattern.

Female: Frons at vertex half as broad as one eye is long, gradually widening towards the antennal groove. Frontal stripe parallel, reddish orange, parafrontalia and -facialia with a silvery-white pollinosity. Chaetotaxy of head complete, with *iv*, *ev*, *f* and two proclinate *fo*; mid-tibia with 2 *pv* and 1 *pd*, 1 *av* and 1 *pv*.

Length: 5-7 mm.

Locality: Mt. Selinda, Rhodesia, 22.XII.1962, 9 ♂♂ and 1 ♀, leg. D. Cookson. Holotype ♂ and 2 paratype ♂♂ as well as the ♀ have been kindly presented to the S.A.I.M.R., Johannesburg. The rest of the specimens are in the collection of the Natal Museum.

***Phumosia currani* n.n. pro *Phumosia incerta* (Curran)**

Mr. C. W. Sabrosky was kind enough to inform us that *Obscuria incerta* Curran (1931) which, in the revision of the Calliphorinae of the Ethiopian region (Zumpt, 1956), was transferred to the genus *Phumosia* Rob.-Desvoidy, is pre-occupied by *P. incerta* Malloch (1926) from Malaya. The latter is currently a synonym of *P. promittens* (Walker, 1860), but still pre-occupies.

The African species is re-named in honour of its discoverer, the famous dipterologist, Dr. C. H. Curran.

***Bengalia tibiaria* Villeneuve**

Bengalia tibiaria Villeneuve, Rev. Zool. afr. 4, 1926, p. 69; Zumpt, J. ent. Soc. S. Afr. 25, 1962, p. 240, fig. 5.

So far only one male specimen was known, namely that collected by Dr. J. Bequaert at Rutshuru, Congo, 20.IX.1914. Mr. D. M. Cookson has now succeeded in catching a second male at Mapembi, Rhodesia, 9.II.1964. This specimen has been kindly presented to the Department of Entomology, S. African Institute for Medical Research.

***Isomyia transvaalensis* n.sp.**

This species belongs to the *distinguenda*-group (Zumpt, 1958) and is, like all species of this group, well characterised by the structure of the hypopygium (fig. 4), which shows fused and very slender cerci with a short terminal incision.

Male: Eyes bare, upper facets hardly larger than the lower ones, frons at its narrowest point measuring about $\frac{1}{4}$ of eye-length. The frons is, therefore, much broader than that of *I. distinguenda* (Vill.) and *I. darwini* (Curran) which also possess fused cerci with a terminal incision. Frontal stripe fully developed over its entire length, being, at the tip of the ocellar triangle, approximately as broad as one parafrontalium. Ocellar triangle, parafrontalia and -facialia densely silvery pollinose, frontal stripe dark-brown. Chaetotaxy of head comprises a pair of long *iv* and *oc* as well as 10 pairs of *paf*, furthermore parafrontalia and -facialia are irregularly beset with black setae; the glossy black parafacial spot is well developed. Antennal groove yellow, antennae bright orange. A broad median carina is present and shows a deep and long median groove; 3rd antennal segment about $1\frac{1}{2}$ times

as long as the second, arista with long hairs on both sides. Bucca 3/7 as high as the eye is long, predominantly black, and orange coloured at the anterior peristomal margin and below the eye. The dark parts of the bucca are covered with a whitish pollinosity which leaves uncovered an anterior, ill-defined glossy spot. Buccal and peristomal hairs and bristles black. Palpi yellow, gradually widened terminally.

Thorax metallic green, with coppery and bluish reflections, and with a slight whitish pruinosity. Stigmata black-brown. Bristles long, $ac = 2 + 4$, $dc = 2 + 4$, $ia = 1 + 3$, prs present, $ph = 2$, $h = 2$, $n = 2$, $sa = 3$ (and 2 shorter ones), $sc = 3 + 1$, pst and pp present, $st = 1 : 1$. Propleuron and alar-declivity bare. Wings with a yellowish tinge, epaulet and basicosta black, veins yellow-brown, costal spine indistinct, m broadly rounded,

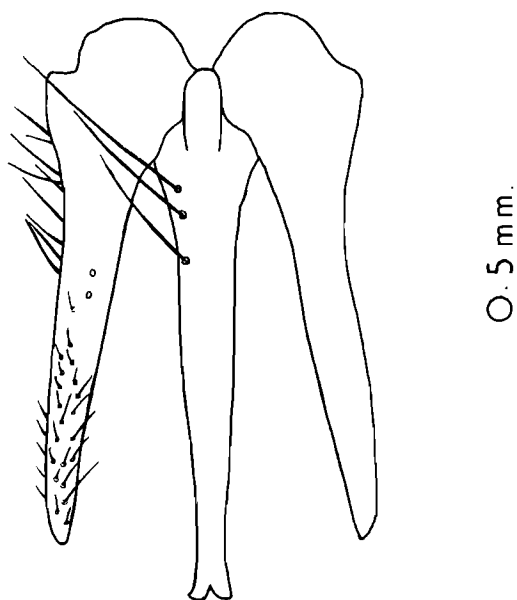


Fig. 4. *Isomyia transvaalensis* n.sp. Cerci with paralobi in frontal view. (Holotype from Rustenburg, Tvl.)

R_5 open. Thoracic squama white, hardly longer than broad, halter yellow. Legs black; fore-tibia with a row of ad and a submedian pv ; mid-tibia with one submedian ad , 2 pd and 2 pv ; hind-tibia with several unequally long ad , pd , and 2 av .

Abdomen longer than broad, coloured and pruinose like the thorax, with lateral and marginal bristles, the last tergite also with discal bristles.

Length: 9 mm.

Locality: Rustenburg, Transvaal, 3.XII.1961, 1 ♂ leg. F. Zumpt, in collection of the S.A.I.M.R., Johannesburg.

***Rhyncomya paratristis* n.sp.**

?*Rhyncomya tristis* Peris (nec Séguy), An. Estac. exp. Aula Dei 3, 1952, p. 115.

Peris (1952) had placed *R. tristis* Séguy near *R. divisa* (Walker), both species being characterised by a distinctly pubescent arista, the longest hairs of which are as long as, or

even slightly longer than, the basal arisal diameter. Zumpt (1956) took over this interpretation, without having seen the type or any specimens which could have been referred to Séguy's species *sensu* Peris.

In 1960, Zumpt was in the position to see the holotype of *R. tristis* in the Paris Museum. It was not possible to dissect the male genitalia, but according to the other morphological features, Séguy's *tristis* is not identical with Peris' *tristis*. The one male, which Peris referred to *R. tristis*, may, however, belong to a new species, represented by 4 ♂♂ and 2 ♀♀ from the Ndumu Reserve in Zululand, which are now before us.

The status of Séguy's *R. tristis* remains doubtful, but a detailed study of the holotype may reveal that it is identical with *R. zumpti* Peris.*

Male: Eyes bare, upper facets slightly larger than the lower ones, frons almost completely constricted in the middle, remaining parafrontalia distinctly narrower than the anterior ocellus. Frontal stripe yellow, only developed in the lower part; parafrontalia black; parafacialia yellow in the upper part, glossy black near the buccae, both covered with a silvery pollinosity. Ocellar triangle black, *iv* and *oc* well developed, 5 to 6 pairs of *paf* in the lower part of the frons; parafacialia without setae. Face, including antennae, yellow, at most the third segment partly yellow-brown, arista distinctly pubescent, longest setae about as long as the basal diameter of the arista. Vibrissa long, with two short bristles above it; peristomal bristles form a continuous row which reaches the postbucca. Bucca yellow and silvery pollinose, with a large glossy spot in the anterior part. Hairs on the postbucca white, bucca with dark and pale setae. Height of bucca about $\frac{1}{3}$ of eye-length. Palpi yellow, widened terminally and slightly broader than the third antennal segment.

Thorax completely metallic dark green, with a whitish and yellowish pollinosity. Prostigma white, poststigma blackish; *ac* = 2 + 4, *dc* = 2 + 4, *ia* = 1 + 3, outer *ph* and *prs* present, *sa* = 3, *n* = 2, *sc* = 3 + 1, *st* = 1 : 1, *pst* and *pp* present. Pleura with long pale hairs, but upper part of mesopleuron with black hairs. Row of mesopleural and hypopleural bristles complete. Suprasquamal ridge, postalar declivity and propleuron bare. Wing hyaline, veins yellow to yellow-brown, costal spine indistinct, hairs of stem-vein black, but thin and few in number, bend of *m* broadly rounded, *R*₅ open. Thoracic squama yellow, about as long as broad, halter yellow. Legs black, fore-tibia with a few short *ad* and a submedian *pv*; mid-tibia with one submedian *ad*, 2-3 *pd*, 1 *pv* and 1 *av*; hind-tibia with several *ad* and *pd* as well as 2 *pv*.

Abdomen predominantly yellow to orange. The hind margins of the tergites are blackened to a variable extent. That of the fourth tergite always completely darkened, that of the second only laterally, whereas the marginal band of the third may be complete or more or less broadly interrupted in the middle. Fifth tergite dark cupreous and densely pollinose. Foregoing tergites with a thinner whitish pollinosity. Hypopygium (fig. 5) similar to that of *R. zumpti*, fifth sternite of normal structure, without spines or protuberances.

Female: Frons at vertex measuring $\frac{3}{5}$ of eye-length; frontal stripe red-brown, slightly narrowed towards the antennal groove, ocellar triangle and parafrontalia densely whitish pollinose. Parafacialia and buccae with glossy spots as in the male. Chaetotaxy of head

*In the mean time it has become possible to re-examine Séguy's material of *R. tristis* in the Paris Museum and this is identical with *R. zumpti* Peris.

complete, parafrontalia with several *fo* bristles and hairs, some of them reaching the length of the *paf*. They are not borne on large, bare spots as in *R. soyauxi* Karsch. Colouring of body and legs as in the male.

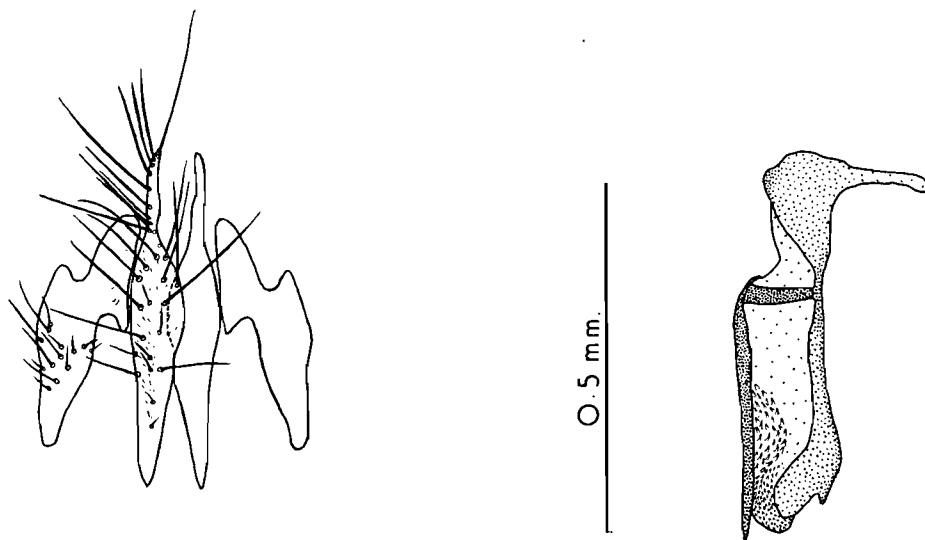


Fig. 5. *Rhyncomya paratristis* n.sp. Cerci with paralobi and phallosome. (Holotype from Zululand.)

Length: 5-8 mm.

Locality: Ndumu Reserve, Ingwavuma distr., Zululand, 1-10.XII.1963, 4 ♂♂ and 2 ♀♀, leg. B. and P. Stuckenberg. Holotype ♂ and a paratypic pair returned to the Natal Museum, 2 ♂♂ and 1 ♀ paratypes in the collection of the S.A.I.M.R., Johannesburg.

***Miltogramma basuto* n.sp.**

Related to *M. munroi* Curran and *M. hirtimanum* Bezzi (see Zumpt, 1961a), but well differentiated from them by the structure of the male terminalia (fig. 6).

Male: Eyes bare, inner facets enlarged, but not sharply delimited from the outer ones. Frons at the tip of the elevated and deeply black ocellar triangle a little more than half as broad as one eye is long. Frons broadest at vertex, slightly narrowed towards the middle and then widened again towards the lunula, frontal stripe yellow-brown, nearly parallel-sided, only at the ocellar triangle ovaly enlarged. Parafrontalia and -facialia densely whitish pollinose. Ocellar triangle with several long and short hairs, but without distinct ocellar bristles; *iv*, *ev* and *f* well-developed, row of *paf* complete. There are 5 pairs of *fo* distinguishable, but the last 2 or 3 pairs are hair-like; in the upper third of the parafrontalia, several more bristly hairs are present. The profrons protrudes for more than $\frac{1}{3}$ of eye-length. Parafacialia with scattered pale setae, which are difficult to detect. Height of bucca about $\frac{1}{6}$ of eye-length, with pale hairs; peristomal bristles black. Postbucca with a few black hairs. Facial ridge at the base with several black bristles forming the continuation of the peristomal bristles. Antennal groove deep, the first two antennal segments reddish.

The third segment black-brown except for the base, $1\frac{1}{2}$ times as long as the second, arista black, pilosity microscopic. Palpi yellow.

Thorax including scutellum black, but densely covered with a yellow and olive-brown pollinosity, a pattern of three darker longitudinal vittae is present. Mesonotum with black hairs, but bristly hairs are only present as a pair of prescutellar *ac*, 2 pairs of prescutellar *dc* and the posterior pair of *ia*; furthermore the *prs* and 3 humeral bristles and the usual lateral bristles are present. Scutellum with 4 pairs of long lateral bristles, discal ones only fairly longer than the normal hairs. Prostigma dark brown, poststigma yellow-brown. Propleuron bare, *pp* and *pst* accompanied by several hairs, rows of mesosternal and hypopleural bristles complete, *st* = 1 : 1 : 1, sternopleuron like the other pleura pollinose in full extent. Prosternum and alar-declivity bare. Wing hyaline, basicosta and veins in the basal area yellow, dark brown towards the tip of the wing; epaulet dark red-brown; *R*₅ broadly open, *m* with a right angle. Thoracic squama broad, white; halter yellow. Legs black, densely grey pollinose; fore-tibia with a submedian *pv*, tarsal segments I to III dorsally and terminally with one pair each of long hairs; mid-tibia with 5 *ad*, 3 *pd*, and one long submedian *av* with a short bristle above; hind-tibia with a row of *ad* and *pd* bristles, as well as several *av* bristles. Tarsi of legs II and III without special features.

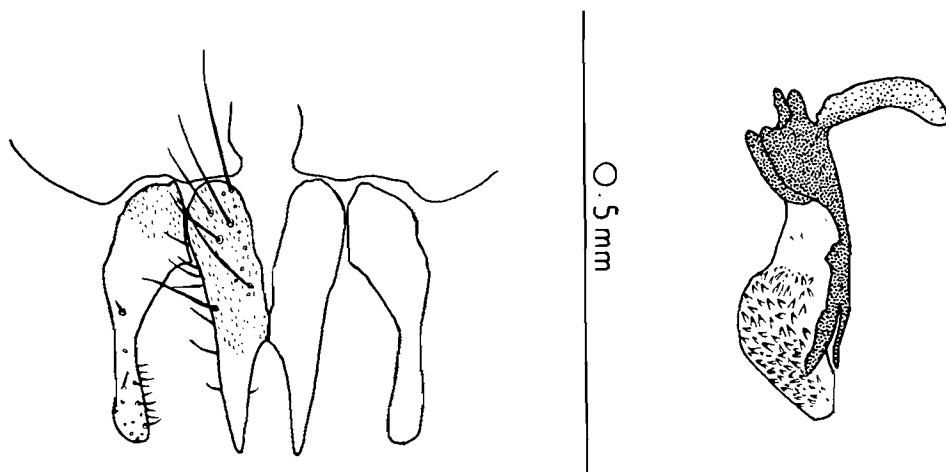


Fig. 6. *Miltogramma basuto* n.sp. Cerci with paralobi and phallosome. (Holotype from the Maseru distr., Basutoland.)

Abdomen about $\frac{1}{4}$ longer than broad, with a black, laterally and ventrally partly yellow-brown underground, and with a dense yellow pollinosity. The dorsal pattern consists of a large yellow and black tessellation, which changes with the incidence of light. Hairs long and black, those at the hind margins of tergites III to V bristly.

Length: 6.5 mm.

Locality: Blue Mountain Pass, Makhaleng Valley, Maseru distr., Basutoland, 12-14-I. 1963, 1♂ leg. B. and P. Stuckenberg. The specimen has been presented to the S.A.I.M.R. Johannesburg.

***Miltogramma audacis* n.sp.**

Like *M. basuto* n.sp., this species also belongs to the *munroi*-group, and apart from the structure of the male genitalia (fig. 7), it is characterised by the frontal stripe being strongly narrowed anteriorly.

Male: Eyes bare, inner facets much larger than the outer ones, but not sharply delimited from them. Frons at the tip of the black, elevated ocellar triangle measuring about $\frac{1}{3}$ of eye-length; slightly widening towards the vertex and the lunula. Frontal stripe red-brown and broadest at vertex, gradually narrowing towards the lunula, where it is only $\frac{1}{3}$ to $\frac{1}{2}$ as broad as at the vertex. Parafrontalia and -facialia densely yellow to white pollinose, parafrontalia at vertex more or less extended, black due to lack of pollinosity. Ocellar triangle with several bristles or bristly hairs, but *oc* not clearly distinguished; *iv*, *ev* and *f* well-developed, *fo* = 2-4, different in number and asymmetrically arranged in each of the 3 specimens before us. Row of *paf* complete. In addition to these bristles, the parafrontalia are beset with scattered black hairs, whereas the parafacialia show only short pale setae. Profrons protruding for about $\frac{1}{3}$ of eye-length. Height of bucca also about $\frac{1}{3}$ of eye-length, pollinosity like that on the parafacialia, hairs white and relatively short. Peristomal bristles black and continuing into those on the lower facial ridge. Antennal groove deep, basal segments densely grey pollinose, third antennal segment about $1\frac{1}{2}$ times as long as the second, blackish for the greatest part, arista deep black. Palpi yellow.

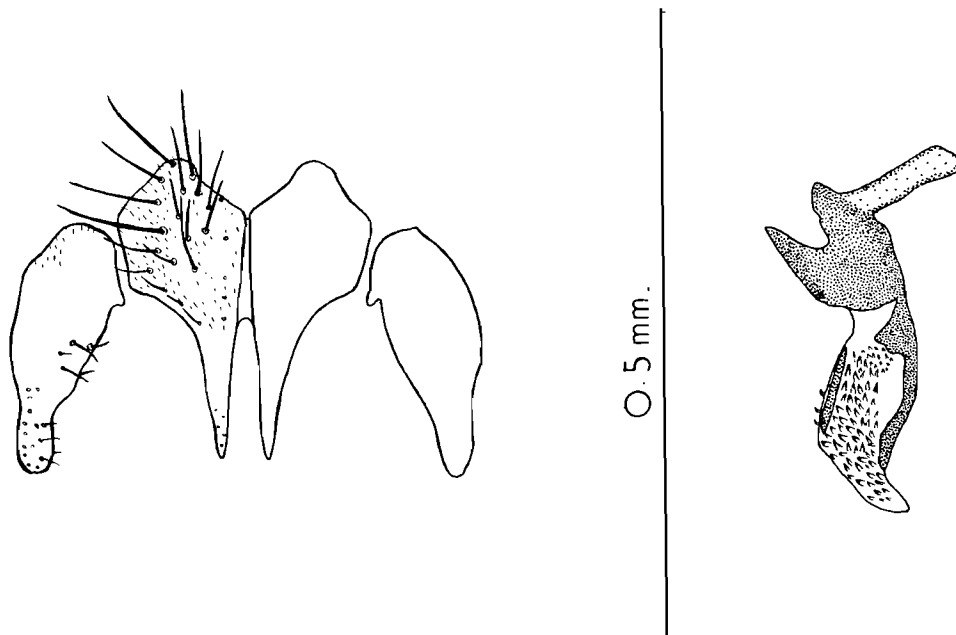


Fig. 7. *Miltogramma audacis* n.sp. Cerci with paralobi and phallosome. (Holotype from the Maseru distr., Basutoland.)

Thorax black, with a dense grey and olive pollinosity. The mesonotal pattern is ill-defined and consists of two black median longitudinal stripes and broad lateral vittae, which are interrupted at the suture. Mesonotal hairs and bristles long, but the grade of thickness varies as in other *Miltogramma* species, and the chaetotaxy does not provide reliable taxonomic features; $st = 1 : 1$ or $1 : 1 : 1$. Sternopleuron pollinose to full extent like the other pleura, pro- and poststigma dark brown. Wing hyaline, basal part of veins including basicosta and epaulet yellow-brown, R_5 broadly open, m with a right angle. Thoracic squama white, halter yellow. Legs black, with a dense grey pollinosity; fore-tibia with short bristles, no long submedian pv developed, tarsal segments I to IV terminal-dorsally with one pair each of moderately long hairs; mid-tibia with a long submedian and at least two shorter ad , 3 pd and a long submedian av ; hind-tibia with a row of unequally long ad and pd bristles, and 2-3 long av . Tarsi of legs II and III without special features.

Abdomen about $\frac{1}{4}$ longer than broad, with a black, laterally and ventrally partly yellow-brown integument. Pollinosity dense, grey and olive, forming a tessellate pattern which changes with the incidence of light. Hairs and bristles black, of moderate length.

Length: 4-5 mm.

Locality: Blue Mountain Pass, Makhaleng Valley, Maseru distr., Basutoland; 12-14.I.1963, 3 ♂♂ leg. B. and P. Stuckenberg. One paratype has been retained for the collection of the S.A.I.M.R., Johannesburg.

KEY TO THE *Miltogramma* SPECIES FOUND IN THE ETHIOPIAN AND MADAGASCAN REGIONS

- 1 (6) Legs predominantly yellow-brown or reddish 2
- 2 (5) Third antennal segment $1\frac{1}{2}$ to twice as long as the second 3
- 3 (4) Third antennal segment black or black-brown, thorax with the integument completely black or black-brown, with a dense grey and olive pollinosity. Abdomen in colour and pollinosity like the thorax, without fixed black spots. 6-9 mm.—Madagascar **M. keiseri** Zumpt
- 4 (3) Third antennal segment bright orange. Thorax with the mesonotum black, the scutellum yellow, pollinosity yellow or yellow-brown. Abdomen densely pollinose like the thorax and with several black spots. 6-8 mm.—South Africa **M. helvum** Villeneuve
- 5 (2) Third antennal segment more than 4 times as long as the second. Abdomen reddish with a greyish-golden pollinosity, tergites I to III with a dark longitudinal line and several lateral spots on III and IV; tergite V almost totally reddish. (We have not seen this species, and it is doubtful whether it really belongs to this genus). 7-8 mm.—Tanzania **M. seriatum** Speiser
- 6 (1) Legs predominantly black or black-brown 7
- 7 (8) Third antennal segment bright yellow or orange. Thorax relatively thinly pollinose, abdomen with large dark spots. 9-10 mm. **M. cuthbertsoni** Curran
- 8 (7) Third antennal segment black or black-brown. (Here *M. maculigerum* Speiser runs down, which is based on a single male from the foot of the Kilimanjaro. It may be identical with one of the following species). Males only 9

- 9 (10) Frontal stripe strongly narrowed anteriorly, at the lunula only $\frac{1}{3}$ to $\frac{1}{2}$ as broad as at the vertex. Fore-tibia with a long submedian *pv*. Thorax and abdomen with a dense grey and olive pollinosity. 4-5 mm.—Basutoland **M. audacis** Zumpt & Stimie
- 10 (9) Frontal stripe not strikingly narrowed towards the lunula, more or less sub-parallel. Fore-tibia without a long submedian *pv* 11
- 11 (12) Profrons more strongly protruding, its width measuring about $\frac{1}{3}$ of eye-length. Colouring and pollinosity as in the foregoing species, abdomen with an ill-defined tessellate pattern. 6-7 mm.—Basutoland . . . **M. basuto** Zumpt & Stimie
- 12 (11) Profrons less protruding, its width measuring $\frac{1}{3}$ of eye-length. Pollinosity generally less dense, abdomen with a banded pattern 13
- 13 (14) Pollinose bands of abdominal tergites broadly interrupted in the middle. Cerci narrow and strongly pointed, paralobi shorter than in the following species, not club-shaped terminally. 5-10 mm.—Central, East and Southern Africa **M. munroi** Curran
- 14 (13) Pollinose bands of abdominal tergites not, or only narrowly, interrupted in the middle. Cerci broadly triangular, paralobi longer and terminally club-shaped. 8-11 mm.—Cameroons, Central and East Africa . . . **M. hirtimanum** Bezzi

Pterella triseriata Curran

Pterella triseriata Curran, Amer. Mus. Nov. 836, 1936, p. 4; Zumpt, Expl. Parc Nat. Albert (De Witte) 98, 1961, p. 97.

Of this species, up till now only one female was known which is preserved in the collection of the Division of Entomology, Dept. of Agriculture, Pretoria. It was found by H. E. Irving near Bloemfontein, Orange Free State, 4.XII.1920.

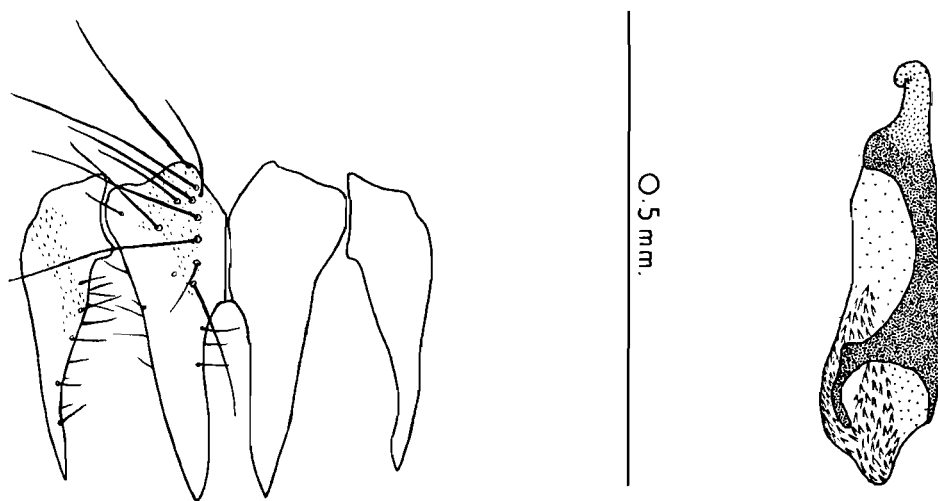


Fig. 8. *Pterella triseriata* Curran. Cerci with paralobi and phallosome. (Specimen from the Maseru distr., Basutoland.)

Mr. and Mrs. Stuckenberg have now succeeded in collecting the male sex, and in addition a new species which is closely related to *P. triseriata* and which, in Zumpt's (1961) key to the Ethiopian species of the genus *Pterella*, also runs down to this species.

P. triseriata and the new species, which is named in honour of its collectors, are easily separable not only by the structure of the hypopygia (figs. 8 & 9), but in both sexes also by the abdominal pattern. In *P. triseriata*, the glossy spots are much larger, the median ones on the third and fourth tergites being triangular and longer than half the segment. In the new species, they are more or less oval and a little shorter than half the length of each tergite. Furthermore, the greyish-white pollinosity in *P. stuckenbergi* is thicker and the spots are more clearly defined than in *P. triseriata*.

There are 2 ♂♂ and 1 ♀ of *P. triseriata* before us, collected near Roma Mission, Maseru distr., Basutoland, 4-13.I.1963. One male has been retained for the collection of the S.A.I.M.R., Johannesburg.

***Pterella stuckenbergi* n.sp.**

The hypopygium of this species is very characteristic in having a bunch of long hairs on the paralobi (fig. 9).

Male: Eyes bare, facets small. Frons at vertex measuring about $\frac{3}{4}$ of eye-length. Frontal stripe red-brown to orange, strongly narrowed towards the antennal groove, at the tip of the ocellar triangle about twice as broad as one parafrontalium. Parafrontalia in the upper part glossy black, in the lower part like the parafacialia densely yellowish pollinose, ocellar triangle black, ocellars accompanied by several bristly hairs; *iv*, *ev* and *f* as well as two long proclinate *fo* developed, black part of parafrontalia densely beset with bristly hairs,

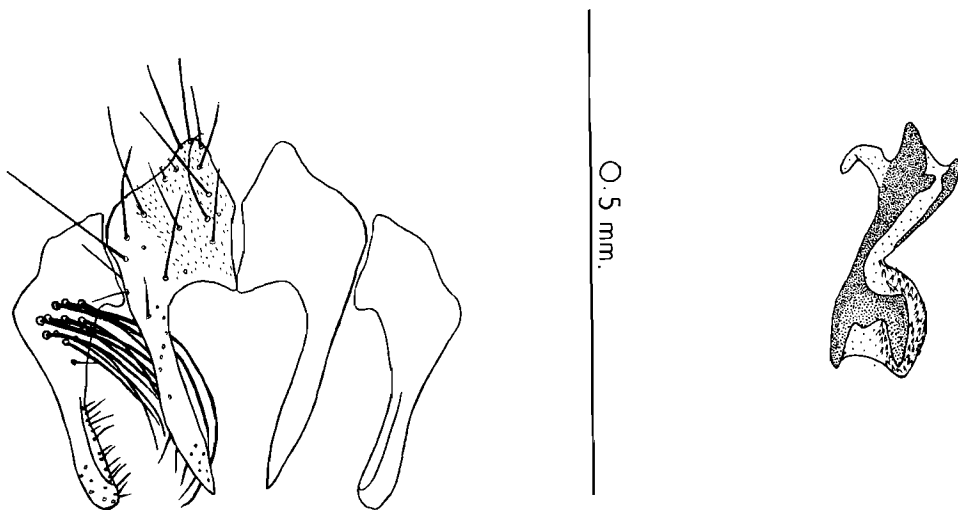


Fig. 9. *Pterella stuckenbergi* n.sp. Cerci with paralobi and phallosome. (Holotype from the Maseru distr., Basutoland.)

row of *paf* complete. Parafrontalia and -facialia below the *fo* with inconspicuous pale setae. Antennae with the second segment black, only the posterior margin is narrowly red-brown, third segment about twice as long as the second, dark brown, arista black. Bucca and vertex black, vibrissarium yellow, with a well-developed vibrissa. Palpi like the long and slender proboscis, black.

Thorax black, densely covered by a yellow-olive pollinosity, with a blackish pattern of longitudinal stripes as in *P. triseriata*. Presutural *ac* indistinct, two weak pairs of prescutellar *ac* present; *dc* = 2 + 3, *prs* and inner *ph* well-developed. Pleura densely pollinose like the mesonotum, *st* = 1 : 1. Wing hyaline, epaulet black, basicosta and veins yellow, *R*₅ broadly open, *m* with a right angle. Legs black, mid-tibia with a long submedian *ad*.

Abdomen with a thick, greyish-white pollinosity which leaves free a number of well-defined, glossy black spots. On tergite I and II, there is a more or less triangular median spot which reaches the anterior as well as the posterior margin, and laterally a large rounded spot is present; tergites III and IV each have three rounded spots which do not reach the anterior border, and the lateral parts of tergite V are broadly devoid of pollinosity.

Female: Corresponds to the male in all important features.

Length: 5-7 mm.

Locality: Roma Mission, Maseru distr., Basutoland, 4-13.I.1963, 3 ♂♂, 1 ♀. Holotype ♂ and one paratype ♂ in the collection of the Natal Museum, 1 ♂ ♀ in the collection of the S.A.I.M.R., Johannesburg.

***Sarcophaga knysnaensis* n.sp.**

In Zumpt's (1951) key to the *Sarcophaga* species of the Ethiopian region, this species is to be placed into the *haemorrhoidalis*-group, and runs down to *S. samia* Curran, from which, however, it is completely distinct in respect to the structure of the hypopygium.

Male: Head silvery pollinose, frontal stripe black, slightly widening towards the antennal groove. Frons at its narrowest point measuring about $\frac{3}{7}$ of eye-length, and one parafrontalium at this point is approximately as broad as the frontal stripe. The parafrontal bristles reach the hind margin of the second antennal segment, *iv* and *f* long and thick. Parafrontalia and -facialia densely beset with black setae, those at the lower eye-margin longer, but not bristle-like. Antennae completely black, the third segment about twice as long as the second, arista with long hairs on both sides. Height of bucca about $\frac{1}{2}$ of eye-length, vibrissa long and thick, bristles and hairs on bucca and facial ridge black, pale on the postbucca. Palpi narrow, slightly curved, black.

Thorax grey pollinose, with the usual longitudinal stripes being dark black, so that the pattern is well-defined. Prescutellar pair of *ac* present, but short, *dc* = 2 + 3 - 4, *prs* and *ph* long, *h* = 3, *n* = 4, *sa* = 3, *pa* = 2, scutellum with 2 pairs of long marginals, a shorter pair of crossed apicals and one pair of discals. Propleuron bare, *pp* and *pst* accompanied by several bristly hairs; *st* = 1 : 1 : 1. Wing hyaline, epaulet black, basicosta yellow, veins dark brown to black; *r*₁ bare, *r*₄₊₅ dorsally with black setae, which nearly reach *r-m*; *cs*₁₋₅ = 9 : 3 : 8 : 3 : 0.6. Legs black; fore-femur partly grey pollinose, fore-tibia with 3 *ad* in the upper half and one submedian *pv*; mid-femur ventrally with a dense row of short bristles in the terminal half, the basal half with long hairs; mid-tibia with two submedian

ad, a long and short *av*, and a submedian *pv* and *pd*, ventral hairs short; hind-femur ventrally with long bristles and hairs; hind-tibia with long ventral hairs, two *av*, several unequally long *ad* and 2 *pd*.

Abdomen black, with the usual chess-board pattern. Tergite III with a pair of relatively short median marginal bristles. Genital segments reddish, the first without strong bristles.

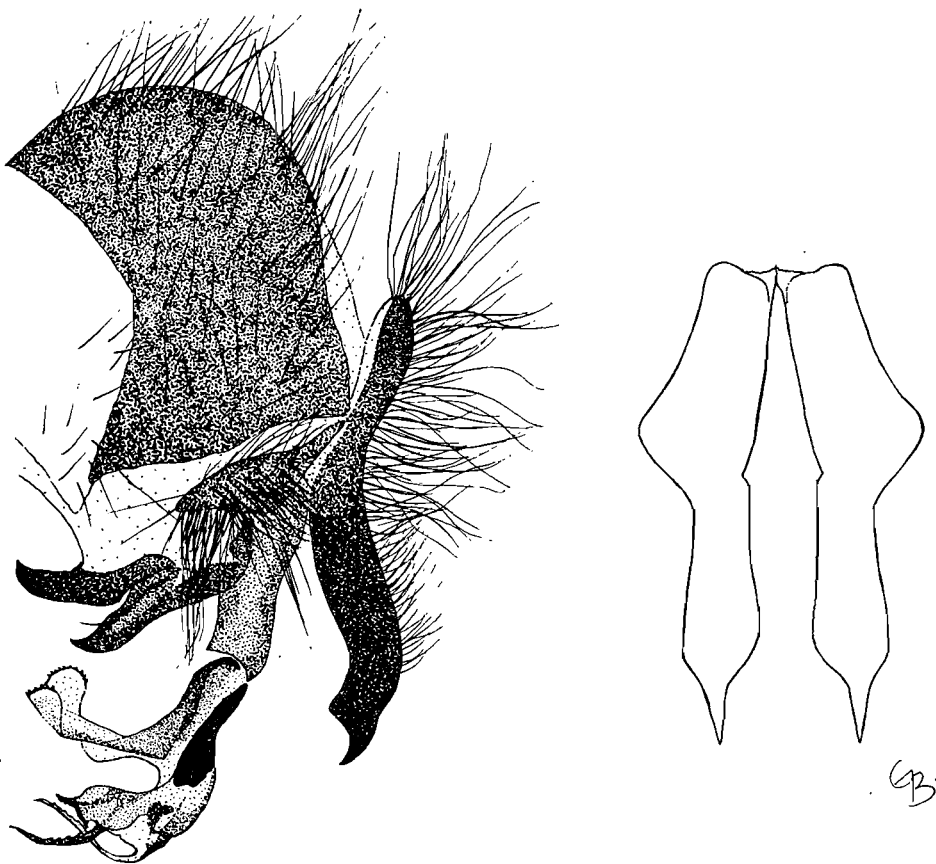


Fig. 10. *Sarcophaga knysnaensis* n.sp. Hypopygium in lateral view, cerci frontally. (Holotype from the Knysna Forest, Cape Prov.).

Cerci undulating, curved. Phallosome with 4 pairs of long appendages (comp. fig. 10, only one appendage each is drawn), two of which are leaf-shaped, one rod-shaped with denticles, and the lowest pair is filiform.

Length: 9-12 mm.

Female sex is not known.

Locality: Knysna forest, Cape Province; 9-12.II.1960, 4 ♂♂. Holotype and 2 paratypes in the collection of the S.A.I.M.R., Johannesburg; one paratype has been presented to the Natal Museum, Pietermaritzburg.

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